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10/595,292	04/05/2006	Heikki Laamanen	0609US-Laamanen	7003

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EXAMINER	
DECKER, CASSANDRA L	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,292	LAAMANEN ET AL.	
	Examiner	Art Unit	
	CASSANDRA DECKER	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5 April 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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Detailed Action

1. Claims 1-4 were cancelled by preliminary amendment. Claims 5-17 are pending.

Claim objections

2. Claims 6, 12, and 13 are objected to because of the following informalities.

In Claim 6 line 2, "at least one conversion element" refers to a previously mentioned item and should be corrected to ---the at least one conversion element---.

In Claim 6 line 3, "each power generating element" should be corrected to ---the power generating element---.

In Claim 12 lines 1-2, "power supply" should be corrected to ---a power supply---.

In Claim 13 line 2, "comprise" should be corrected to ---comprises---.

Appropriate correction is required.

Claim rejections – 35 USC 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 5, 10, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For Claims 5, 10, and 14, the "its" in the phrase "its operating power" is not explicit. Examiner assumes that "its" refers to the conversion element.

Claim rejections – 35 USC 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough (US 2002/0063924) in view of Natra (EP 1009156).

For Claim 5, as understood in light of the 112 rejection, Kimbrough teaches a method for establishing subscriber connections between a central site and a plurality of subscriber premises in a digital hybrid subscriber network, the method comprising the steps of:

- coupling an RDSLAM by at least one optical fiber to the central site (see Figure 1 item 44);
- coupling a plurality of subscriber transmission devices to the RDSLAM via a corresponding plurality of subscriber-specific electrically conductive transmission lines (see Figure 1 items 46, 52, and 60, 58, and 56; the HNU

would be integrated with the OSP in order to save the expense of fiber by using twisted pairs already in place for the connection to the premises equipment);

- coupling each transmission line to a corresponding conversion element in the RDSLAM (See paragraph 62);

- coupling each conversion element optically to a passive optical element (see Figure 1 items 48 and 46), each conversion element being constructed to

produce a subscriber-specific electric signal from downstream signals received from the passive optical element and to feed the subscriber-specific electric signal to the corresponding transmission line (see paragraph 62 and Figure 1 item 52);

convert a subscriber-specific upstream signal received from the corresponding transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element (see paragraph 62);

operate independently of other conversion elements in the RDSLAM (see Figure 1 items 50); and

- coupling the passive optical element to the at least one optical fiber (see Figure 1 items 46 and 44), wherein the passive optical element is constructed to

receive the downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements; and combine the upstream optical signals received from the conversion elements onto the at least one optical fiber (see paragraph 57).

Kimbrough does not teach the each conversion element receiving its operating power through the corresponding transmission line. However, Natra teaches the each conversion element receiving its operating power through the corresponding transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems using the method of Kimbrough through the powering system of Natra.

For Claim 6, Kimbrough teaches a method further comprising the steps of: inserting a power-generating element into at least one conversion element; and constructing each power-generating element to produce operating power for the corresponding conversion element (see paragraph 68).

Kimbrough does not teach electric power received through the corresponding transmission line. However, Natra teaches electric power received through the corresponding transmission line (see Abstract).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems through the powering system of Natra.

For Claim 7, Natra further teaches a method further comprising a step of feeding electric power from a subscriber transmission device through the corresponding transmission line to the corresponding conversion element (see Figure 1, Abstract, and paragraph 12).

For Claim 8, Kimbrough further teaches a method wherein at least one conversion element is constructed to convert the downstream signals from optical form to electric form; and separate the subscriber-specific electric signal from the converted signals (see Figure 1 item 52 and paragraph 62).

For Claim 9, Kimbrough further teaches a method wherein at least one conversion element is constructed to separate a subscriber-specific signal from the downstream signals; and convert the separated signal from

optical form to electric form, thereby to obtain the subscriber-specific electric signal (see Figure 1 item 52 and paragraph 62).

For Claim 10, as understood in light of the 112 rejection, Kimbrough teaches a digital hybrid subscriber network (see Figure 1) comprising:

- at least one optical fiber coupled to a central site at its first end (see Figure 1 item 44);
- an RDSLAM coupled to a second end of the at least one optical fiber, the RDSLAM being located at an intermediate site between the central site and a plurality of subscriber transmission devices, the RDSLAM being further provided with a passive optical element coupled with the at least one optical fiber, and with a plurality of subscriber specific conversion elements (see Figure 1 items 46, 48, 50, and 52);
- a plurality of subscriber-specific electrically conductive transmission lines coupled between the plurality of conversion elements and the corresponding plurality of subscriber transmission devices (see Figure 1 items 60, 58, and 56);
- wherein the passive optical element is constructed to receive downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements; and combine upstream optical signals received from the conversion elements onto the at least one optical fiber (see paragraph 57 and Figure 1 item 46);

- and wherein at least one conversion element is constructed to produce a subscriber-specific electric signal from the downstream signals received from the passive optical element and to feed the subscriber-specific electric signal to the corresponding transmission line; convert a subscriber-specific upstream signal received from the corresponding transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element (see paragraph 62 and Figure 1 item 52); and operate independently of other conversion elements in the RDSLAM (see Figure 1 items 50).

Kimbrough does not teach the at least one conversion element receiving its operating power through the corresponding transmission line. However, Natra teaches the conversion element receiving its operating power through the corresponding transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems using the method of Kimbrough through the powering system of Natra.

For Claim 11, Kimbrough teaches a digital hybrid subscriber network wherein at least one conversion element comprises a power-generating

element for producing operating power for the corresponding conversion element (see paragraph 68)

Kimbrough does not teach electric power received from the corresponding transmission line. However, Natra teaches electric power received from the corresponding transmission line (see Abstract).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems through the powering system of Natra.

For Claim 12, Natra further teaches a digital hybrid subscriber network further comprising power supply constructed to supply the operating power required by each conversion element through the corresponding transmission line (see abstract, Figure 1, and paragraph 12).

For Claim 13, Natra further teaches a digital hybrid subscriber network wherein the power supply comprise current feeding means in each subscriber transmission device, the current feeding means being constructed to feed direct electric current onto the corresponding transmission line (see abstract, Figure 1, and paragraph 12).

For Claim 14, as understood in light of the 112 rejection, Kimbrough teaches an RDSLAM equipment for a digital hybrid subscriber network (see

Figure 1 items 46, 52, and 60, 58, and 56; the HNU would be integrated with the OSP in order to save the expense of fiber by using twisted pairs already in place for the connection to the premises equipment), the RDSLAM equipment comprising:

- an optical interface for connecting the RDSLAM equipment to at least one optical fiber (see Figure 1 item 44);

- an electric interface for connecting the RDSLAM equipment to a plurality of electrically conductive transmission lines (see Figure 1 items 46, 52, and 60, 58, 56);

- at least one passive optical element coupled to the optical interface for receiving and sending optical signals therethrough (see Figure 1 item 46);

- a corresponding plurality of subscriber-specific conversion elements each coupled to a corresponding transmission line (see Figure 1 items 50) and being operable to:

produce a subscriber-specific electric signal from downstream optical signals received from the passive optical element and to feed the subscriber-specific electric signal to the corresponding transmission line (see Figure 1 items 52, and 50, 58, and 56; paragraph 62);

convert a subscriber-specific upstream signal received from the corresponding transmission line to an upstream optical signal and to feed

the upstream optical signal to the at least one passive optical element (see paragraph 62); and

operate independently of other conversion elements in the RDSLAM equipment (see Figure 1 items 50).

Kimbrough does not teach the conversion element receiving its operating power through the corresponding transmission line. However, Natra teaches the conversion element receiving its operating power through the corresponding transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems using the method of Kimbrough through the powering system of Natra.

For Claim 15, Kimbrough teaches an RDSLAM equipment wherein each subscriber-specific conversion element comprises a power-generating element to produce operating power for the corresponding conversion element from the electric power (see Kimbrough: paragraph 68).

Kimbrough does not teach a power-generating element constructed to receive electric power from the corresponding transmission line. However, Natra teaches a power-generating element constructed to receive electric

power from the corresponding transmission line (see Abstract, paragraph 12). Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to power the power generating element according to Kimbrough over the transmission line according to Natra. The motivation for doing so would be to allow the extension of the range of xDSL systems Kimbrough through the powering system of Natra.

For Claim 16, Kimbrough teaches an RDSLAM equipment wherein the optical signals are in digital form and the subscriber-specific electric signal is in analog form (see paragraphs 62, 64, 65).

For Claim 17, Kimbrough teaches an RDSLAM equipment wherein the subscriber-specific electric signal is in analog form (see paragraphs 62, 64, 65). Kimbrough does not teach the optical signals being in analog form. However, optical signals in analog form are well known in the art.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use analog optical signals, where the claimed differences involve the substitution of interchangeable or replaceable equivalents and were made on for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. *In re Ruff, 118, USPQ, 343 (CCPA 1958)*. This supporting is based on a recognition that the claimed difference exists not a as result of an attempt by applicant to

solve a problem, but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fussganger (US 5202780) teaches a hybrid network and RDSLAM similar to that claimed in the instant application. Ichikawa (US 6031645) teaches a bidirectional optical communications system in which the elements are arranged in a manner similar to those of the claimed invention. Tirri (US 2007/0014306) teaches a RDSLAM which could be used interchangeably with that claimed. Deas (US 2004/0175173) teaches a hybrid network and RDSLAM with RF connections to subscriber premises. Alferness et al. (US 4991975) teach a pertinent RDSLAM with an active optical element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASSANDRA DECKER whose telephone number is (571)270-3946. The examiner can normally be reached on Monday through Friday, 7:30 am to 5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Nguyen can be reached on (571) 272-3159. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CD 5/15/2008

/Steven H.D Nguyen/

Primary Examiner, Art Unit 2619